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ABSTRACT

Workplace basics are those basic skills that enable adult employees and prospective employees to learn and perform tasks on the job and in the training environment, thus increasing the likelihood of their being hired, advancing on the job, and participating in more advanced training opportunities. This manual provides a holistic, global definition of workplace basics and gives program directors, teachers, tutors and others a "fast start" on workplace basics' applied learning. The manual contains four chapters. Chapter 1 is an overview of the new workplace basics. Chapter 2 provides information on starting, planning, and developing a proposal for a workplace basics program. Chapter 3 examines job skills assessment, explaining job audits, standardized and criterion-referenced tests, and other forms of needs assessment. Chapter 4 provides an instructional design for workplace basics, including a learner-centered curriculum model and suggestions for developing customized materials, scheduling information, and planning for ongoing evaluation. A bibliography lists 11 references. (KC)

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Workplace Competencies

for

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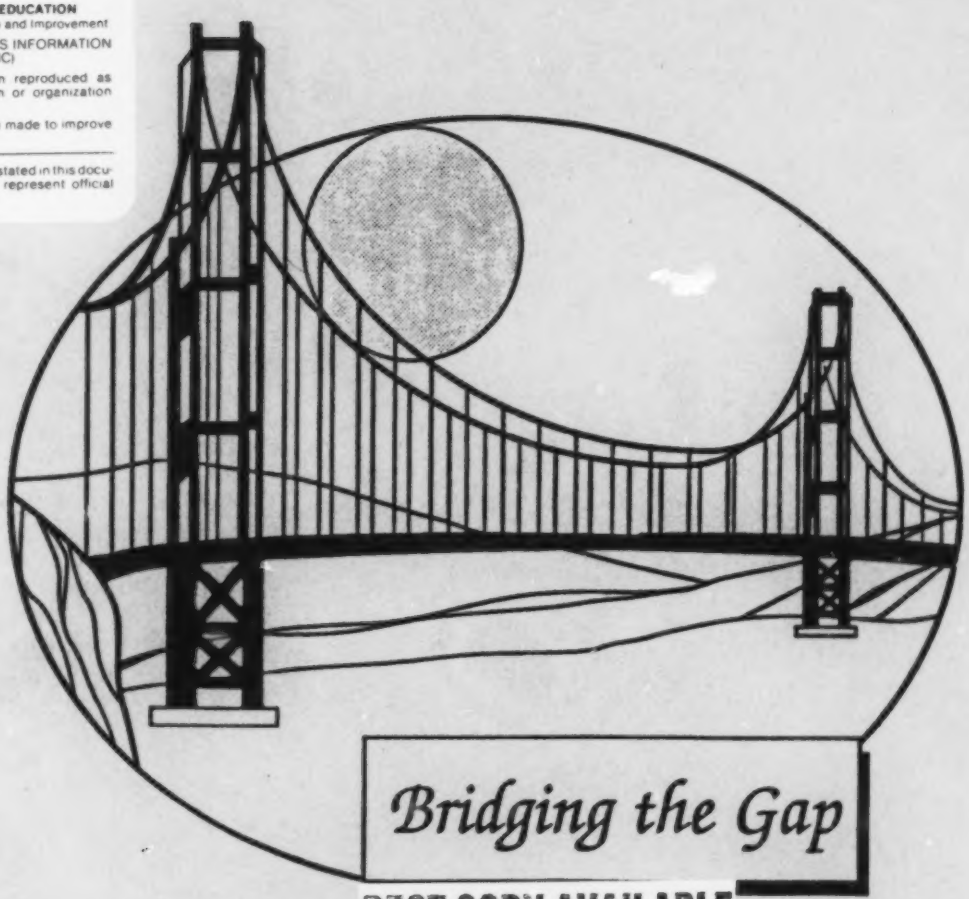

Bridging the Gap

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Foreword

The purpose of this manual, ***Workplace Competencies for Teachers and Tutors,*** is multifaceted:

- It provides a holistic, global definition of workplace basics, integrating current research findings into the manual's philosophy and format.

- It gives program directors, teachers, tutors, and newcomers to the field a "fast start" on workplace basics' applied learning.

Chapter One of the manual provides an overview of the new workplace basics. Chapters Two through Four offer instruction related to their respective subjects. All content is related to the creation, development, and implementation of Workplace Basics training programs and curricula.

The manual's purpose, rather than fulfilling all training needs, serves to briefly present information about Workplace Basics training, serving as the "bridge" between academia and business, between ivory towers and steel obelisks.

Chapter One
Workplace Basics: A Venture and A Challenge

Objectives:

To define workplace basics
To provide background information on the changing workplace and workforce
To establish the manual's purpose

The "hot" topic in adult education and literacy circles these days is the new workplace literacy or workplace basics. Although "literacy" implies a connection to existing adult basic education and literacy programs, updating aspiring or current laborers' skills requires assessment and instructional strategies different from those you may once have used.

For educators, establishing a Workplace Basics program may be likened to Dorothy's Oz adventure. Imagine crash-landing into a new territory, vibrant with a colorization all its own--not supplied from the palette of Ted Turner. Looking around at the wonders of this world, you will no doubt feel as did Dorothy: "Toto, I don't think we're in Kansas anymore." New terrains, full of "*lions, and tigers, and bears, oh, my!*", await you. Like the Scarecrow, your intellectual abilities will be needed to analyze the situation, develop a plan, and implement and follow through on the program. Like the Tin Man, your heart's desires will come into question as you explore your inner strengths and weaknesses, develop your abilities. Like The Cowardly Lion, your courage will stand you in good stead as you make new contacts and chart courses for yourself that may seem, initially, to be foreign. And like Dorothy, your longing for home, a return to the familiar, will fuel your efforts to learn needed skills and utilize what you already know to make the journey through the new world comfortable.

But what is this "brave new world that has such creatures in it?" A definition and delineation of workplace basics' distinguishing characteristics will serve as a useful guide for the road ahead.

The Definition of Workplace Basics

Workplace Basics are those basic skills that enable adult employees and prospective employees to learn and perform tasks on the job and in the training environment, thus increasing the likelihood of their being hired, advancing on the job, and participating in more advanced training opportunities.

From ***Adult Literacy: Skills for the American Workforce***, The National Center for Research in Vocational Education, Research & Development Series #265B, p. 19.

Are we talking about learning the same basics, *reading, writing, and computation*, that have been addressed in adult basic education and literacy training for years? As long as the company's needs are served, the "Three R's" are an integral part of the curriculum used.

ASTD's ***Workplace Basics: Skills Employers Want*** defines the basics more precisely within a skill framework of seven skill groups. **All skills** are defined in relationship to the **workplace skill requirements**.

The Seven Skill Groups are:

Learning to Learn
3 R's (Reading, Writing, Computation)
Communication: Listening & Oral Communication
Creative Thinking/Problem Solving
Self-Esteem/Goal Setting - Motivation/Personal & Career Development
Interpersonal/Negotiation/Teamwork
Organizational Effectiveness/Leadership

For example, ***Learning to Learn*** skills provide the keys to other successful learning, combining the remaining six skills with OJT (on-the-job training), daily living/coping skills, and lifetime learning. ***Learning to Learn*** may be the identification of individual learning styles and preferences: how does the worker best absorb information? What analytical approaches may be utilized to study a training chart? How do various reading strategies work with selected materials?

The Workplace Basics programs are funded through private sector monies and/or very limited assistance from federal, state or grant programs. Companies, unions, and organizations that have demonstrated educational and organizational leadership usually commit resources to worker training. A few companies, especially under labor contract agreements, offer a wider range of employee educational programs, and when this kind of skills enhancement program is offered, the model workplace basics program described in this manual may be modified accordingly.

Competition in the marketplace may demand the upgrading of **large numbers** of employees, such as when a company undergoes downsizing of the workforce due to new technology or implements "across the board" reforms. More often, **targeted jobs** require skill upgrades to bring specifically-identified skill deficits up to the new performance standards. Statistical Process Control (SPC), for instance, may require an upgrade in mathematics, basic statistics, and calculator skills, all of which are related to the SPC training.

Why must companies invest time, money, and person-power in Workplace Basics training?

The Nation's Need for Workplace Basics

Driven by new technology [robotics, automated manufacturing, information systems], participative management [decentralized authority], sophisticated statistical quality controls [quality control/information systems], customer service [communication and personnel management skills], [and] just-in-time production, the workplace is changing and so are the skills that employees must have in order to change with it.

Carnevale, Gainer, Meltzer, ***Workplace Basics: The Skills Employers Want,*** American Society for Training and Development and U. S. Department of Labor, Employment & Training Administration, Spring, 1989, p. II.

- **Demographic changes in the adult workforce result in lower skill levels:**

The parallel change in worker demographics complicates and compounds the training problem. From the *Workforce 2000* report are these findings:

- 75% of the future workforce (2,000 A.D.) is presently employed.
- The future job pool will consist of more women, minorities and immigrants.
- A low level of achievement among students leaving our nation's schools plus
- Accelerated drop-out rates continue to increase the pool of the unemployed or unemployable .

- **Add rapid changes in technology, product life, and competition to the problem:**

This quote from ***Investing in People: A Strategy to Address America's Workforce Crisis***, Commission on Workforce Quality and Labor Market Efficiency, U. S. Department of Labor, Labor Day 1989, describes more fully the skills training deficits:

Moreover, the skills shortfall is not confined to new or prospective workers. Large numbers of experienced workers have skills that are now obsolete or soon will be made obsolete by changes in technology or by declines in specific industries. With technological change accelerating and international competition increasing, the life cycles of products, technologies, and industries from initial expansion to final contraction have shortened. Shorter cycles will result in even more rapid obsolescence of workers' skills and will heighten our need for retraining systems.

Missouri's Need for Workplace Basics

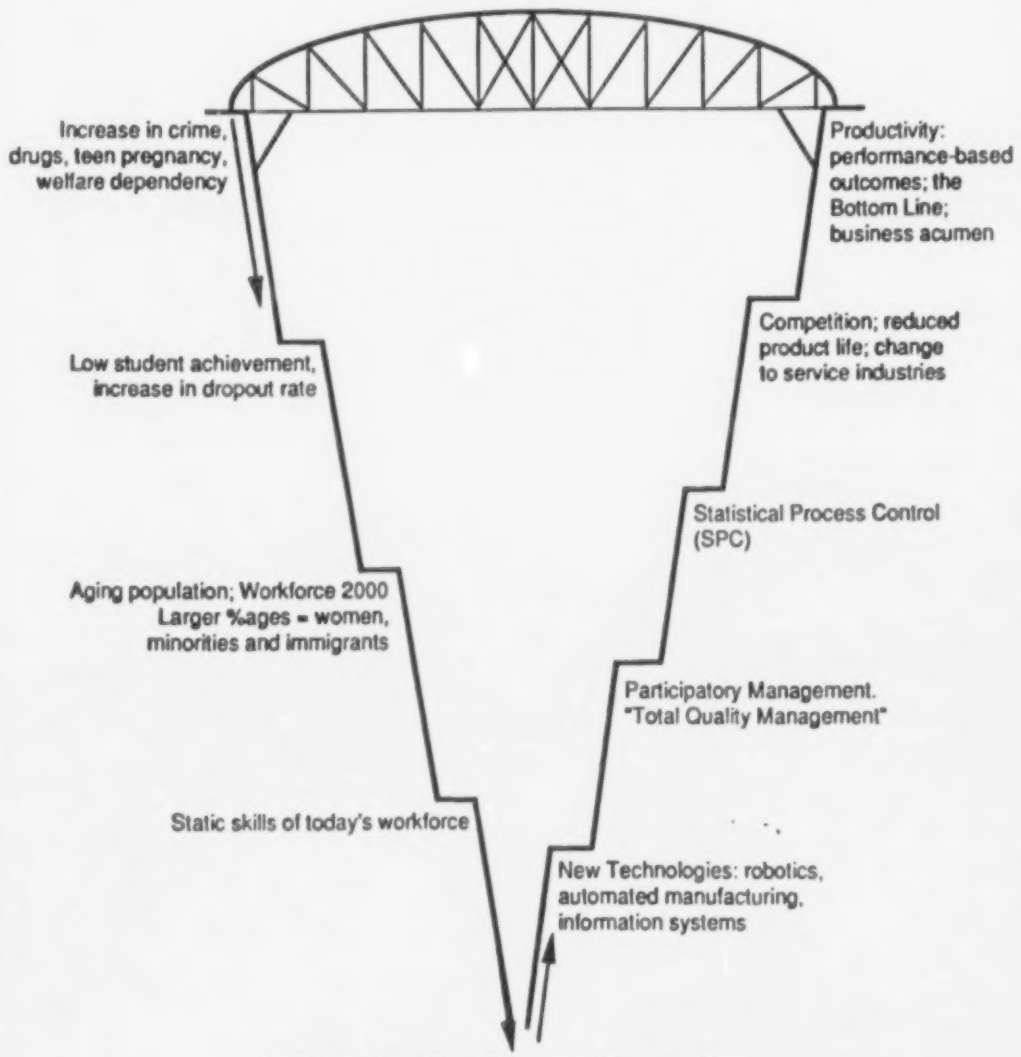
The Jobs for Missouri's Future, Inc.'s, Spring 1990 report, ***Education and Training in the Missouri Economy*** , explains the current training trends and predicts future training needs for Missouri's workforce.

- Missouri managers are optimistic about future growth prospects for the number of employees that business will need.
- Technology is bringing about both positive and negative workplace changes.
- Missouri employers reported that many specific skills levels of their workers are adequate, but there are some concerns in skill areas such as the ability to set priorities, communicate effectively, and solve problems.
- Most firms attempt to solve workplace problems by hiring workers from outside their firms rather than promoting employees from within.
- Very few Missouri firms expend funds for training employees.
- Very few employers use the full range of training resources now available to them.
- Current training practices do not address the skills that employees most need.
- The workers most in need of training receive less training that those workers with higher levels of education and expertise.
- Smaller firms face a potentially greater skills and training mismatch.
- Larger firms do the most training, but are more critical of their workers' skills.
- Firms that believe they are more "innovative" are also more likely to think that training is a good investment, are more likely to invest in their workers, and use a wider range of available training options.

The resulting "skills gap" is graphically portrayed in the model on the following page.

As you will notice, the evolution of the workplace requires new technologies, participatory management, statistical process control, competition, and productivity. Profit, the new Mammon, rules all. Workers unable to equal or better their peers--foreign and domestic--miss promotions and raises or lose employment. Add sociological ills--crime, drugs, public aid dependency, dropouts--and an aging/less-skilled workforce to this speeding decline, and the urgent need for a bridge connecting these two parallel paths seems clear. This bridge, the Workplace Basics program, allows workers to become more competitive, re-educates the aging/dropout population, and improves our competitiveness. Corporate profitability rests not in mergers and acquisitions, but in its workers once more.

"Bridging the Gap"
Skills Enhancement through Workplace Basics


Increase in crime, drugs, teen pregnancy, welfare dependency
Low student achievement, increase in dropout rate
Aging population; Workforce 2000 Larger %ages = women, minorities and immigrants
Static skills of today's workforce
New Technologies: robotics, automated manufacturing, information systems
Participatory Management. "Total Quality Management"
Statistical Process Control (SPC)
Competition; reduced product life; change to service industries
Productivity: performance-based outcomes; the Bottom Line; business acumen

A Changing Workforce and Workplace

Graphic depiction by Wilma Shelfer,
St. Louis Community College; August 1990

The Manual's Purpose

To address a particular company's needs for more-skilled employees and workers' needs for security and advancement, teachers new to the world of Workplace Basics need guidance in how to research and develop an effective training program.

This manual, therefore, proposes to outline and explain the American Society for Training and Development's seven steps to an effective Workplace Basics program, and offer illustrative examples of the plan in action. The seven steps are as follows:

Step 1: Identify Job Changes or Problems Related to Basic Workplace Skills.

Step 2: Build Support for Training Through Workplace Alliances.

Step 3: Present the Strategy and Action Plan for Approval.

Step 4: Perform a Task Analysis.

Step 5: Design the Curriculum.

Step 6: Develop the Program.

Step 7: Implement the Program.

Step 8: Evaluate and Monitor the Program.

Chapter Two
Getting Started

Objective:

To explain Steps 1, 2, and 3 of the ASTD's outline
To explain networking and initiating procedures

To properly identify job changes, problems related to basic workplace literacy skills, and build support for training through workplace alliances, you must first build a professional network.

"How-to's" for Establishing Contacts in the Workplace

• **Research community needs.** The Chamber of Commerce (or a similar community-based agency) may know specific companies or agencies needing Workplace Baiscs programs. Study any available research data--most likely available at a university or community college--regarding workplace needs or workforce characteristics.

• **Touch base with close associates who are connected with business, the unions, industry, and government agencies. Expand your circles of influence.** This way, you will familiarize yourself with management styles and manufacturing processes. Information-gathering tours of local businesses will offer you another opportunity to observe and interact with various individuals. Idea: Start with the local banker who serves your financial needs. Talking about Workplace Basics with many people may create interest in your program, and this will help you internalize your program's goals and objectives.

• **Proclaim and train.** Advertise your interest in becoming a partner for Workplace Basics programs. Prepare for some **off-site** training (at a site other than the business) that could serve small numbers of workers from a variety of companies. This may be the place where you can *field test* your capabilities.

• **Your phone rings.** The contact begins with either a phone call from the prospective company,or a referral is made through an agency that knows you have the desire, ability, and/or the facility to begin Workplace Basics programs in the area.

Questions you will need to have answered in the initial conversation:
With whom are you speaking?
Wl.at is his/her role in the organization?
How did he/she come to contact your organization?
What interest or need exists for Workplace Basics in the organization?
When may you meet with the contact person to discuss the problems/needs further?

Questions the agency may ask you:
What has your organization accomplished?
How do you define workplace "literacy"?
What are your track record and success rate for program participants?
Can you send us some information about your program?

Have a written overview of your proposed program available to give to callers. Try to arrange a meeting with each caller. Follow up each contact with a letter confirming the meeting time, date, and place.

Prior to your initial meeting, try to learn all you can about the company, agency or organization:
What does the company do?
If manufacturing, what do they produce?
If service, what kind of service for which targeted population?
If sales, what is the targeted market?
Company size, location(s), subsidaries, when founded
Description of senior management.

Now, the next stage of research and networking begins. The contacts you make during the first and all subsequent meetings become your support for all future labors. Therefore, gather as much information as you can, and utilize your most effective communication skills.

The First Meeting:
Here are general guidelines for what you need to know:

Clarify the organizational needs and goals:

Recap or clarify any general information about the company.
Recap or clarify the problems or needs that are being experienced (why you are there!)

Who is **responsible** for assisting in the planning process for this program?
Who should be **involved** in the initial planning process?

You may also need to learn:

What kind of management style is utilized by the organization?
Are annual performance appraisals conducted? Are they utilized for promotions, demotions, or firings?
Is there a program for employee incentives utilized by the company--profit sharing, company benefits, etc?

Is the organization unionized? If so:

What number of layoffs has been experienced?
Have there been any strikes recently?
Ask questions regarding negotiated agreements for educational programs, tuition assistance, etc., and the percentage of workers who take advantage of such programs.
If a union exists, request the involvement of union representatives during the initial planning phase.
Have there been alcohol, drug problems? Is there an Employee Assistance Program?

Clarify the organization/instructional parameters:

Who is the target population for instruction/training?
What efforts have been made to correct deficiencies thus far?
What are the consequences or ramifications of deficiencies?
Does the organization have a preference for an on-site or off-site training program?
Will workers participate on a **voluntary** or **mandatory** basis?
What consequences exist for marginal participation or failure to participate?
Will work time be provided for instruction? 100% employee time? or shared time? (Shared time is an equal amount of time for instruction provided during company-paid time and worker's unpaid time.)
Provide the **Blueprint for Success** steps as a guideline for comprehensive program planning and design.

- Identify job changes or problems related to basic workplace skills.
- Build support for training through workplace alliances.
- Present the strategy and action plan for approval.
- Perform a task analysis.
- Develop the program.
- Implement the program.
- Evaluate and monitor the program.

Based on the sponsoring organization's needs and goals, determine which steps are **essential** for success. Make a recommendation supported by known facts as to the minimal steps which must be taken.

The Planning Process

Following the initial meeting, the real planning will begin. The planning group's involvement will significantly affect the program's design and development. In an ideal situation, they become a decision-making team, responsibile for input into all facets of the Workplace Basics program. Although there are **few** ideal situations, your team-building efforts will lead to greater success.

Key People to Include in the Planning Group:

1. A responsible **contact person**, involved in all planning, implementation, and evaluation phases must be designated. If the union and management share decision-making authority, appoint equal representation from both sides.

2. The **direct supervisors** of the prospective trainees must be included. They will provide valuable insights into workers' needs, especially regarding day-to-day responsibilities and performance. They also know required workplace materials.

3. **Key employees**, highly proficient at the targeted jobs, should attend. They may help develop formal/informal task analyses and encourage worker participation in the training.

Worker Concerns and Considerations:

Because the term "literacy program" implies "illiteracy" and evokes negative images in most people's minds, many workers will feel threatened by such a phrase. *Workplace Basics* or *Skills Enhancement*, on the other hand, describe skill upgrades, not "reading, writing, and math", and present a more positive picture of the course's content. Therefore, as you are making your presentations, developing your curricula, and teaching your sessions, be careful of the words you use. Your sensitivity to individuals' emotions promotes goodwill and builds credibility for you as an instructor.

How will workers feel about the training and what kind of reactions can be expected? Listen to some "real" responses:

"What's in this for me?"

"What's going to happen if I don't participate?"

"What ulterior motive does the company have in "offering" me this opportunity?"

"Will my continued employment be affected?"

"Will my test scores be reported?"

"Will my progress be reported to the company?"

"How much will this cost me?"

Questions for the educational provider/trainer to consider:

How will you handle the problem of worker/participant confidentiality?

How will you approach management regarding this issue?

How will you answer the worker's questions?

Consider possible responses to such questions early in the planning process. Once you commit to procedures for handling confidentiality, reporting, and participation, a next step may be to plan an informational meeting to discuss the program with all targeted workers.

Prepare a **handout** that offers:

- a rationale for the training
- a description of the training
- a list of expected questions and concerns (answered during the meeting)
- the time, date, and place when actual training will begin
- contact name(s) and phone number(s) for more information.

IMPORTANT: Keep records and responses confidential. Frequently reassure workers of this.

Laying the programmatic and instructional foundations:

During the initial meeting of planners, obtain more specific information about targeted needs and possible participants. TAKE GOOD NOTES. As educational provider, you will need to know where the organization wants training to take place. You will need to be able to provide information on the assessment and instructional development process, and you will need to be able to provide information on how much the program will cost. Budgets are very important in the business world. Therefore, stress how your program's cost effectiveness results from increased productivity, employee satisfaction, and safety. See the **Workplace Basics Training Manual** for detailed information regarding cost/benefit issues.

The sample Questionnaire on page 15 could be used as a basis for discussion or provided to planners before the first meeting. Afterwards, send a follow-up report detailing planning decisions to all committee members.

Workplace Basics Initial Meeting Questionnaire

Company Name_____**Date**_____

Contact Name _____**Phone Number**_____

List proposed planners: (Include job titles and phone numbers.)

1.
2.
3.
4.
5.

(Additional names may be added as needed.)

Briefly describe the problem/need(s) to be addressed:

Workplace Basics Goal/Objectives:

Instructional Design:

Task Analysis:

Assessment Design and Procedures:

Curriculum Development:

Instructional Resources/Materials:

Evaluation Methods/Procedures:

Where and When will instruction take place:

Costs:

How to Get From the Planning Stage to the Development of a Proposal

Following each planning meeting, recap the discussions and note important details.

- Has the problem/need been fully articulated?
- Has the scope of training (program design) been defined?
- Have the goals and objectives been sufficiently clarified?
- Have employee concerns been anticipated and discussed?
- Has a project timeline been discussed?
- Have staffing needs been considered?
- What curriculum and resources will be needed?
- What costs can be anticipated? What degree of commitment exists?
- How will the program be evaluated?

Be sure to include any perceptions as to attitudes or feelings that may have surfaced in your meetings. Your notes will provide much-needed information as you begin to think through your plan of action and write the proposal.

Presenting the Strategy and Action Plan for Approval

As Educational Provider, you must draft the proposed Action Plan. The Plan should include the following components, as specified in ASTD's ***Workplace Basics Training Manual,*** p. 3.15:

- *A summary of the project's background and purpose*
- *A list of specific project outcomes*
- *A description of activities to be performed*
- *A list of items to be delivered*
- *Identification of personnel who will actually be working on the project*
- *A timetable for completing the work*
- *A fee agreement and payment schedule*

- *A description of any special arrangements between the parties (for example, access to company information on the work floor)*
- *A cancellation clause should the provider fail to perform as contracted.*

Each section of the proposal--comprehensive, concise, and well written--must correspond to all plans and recommendations made by the committee. Copies should be provided to each person for approval.

Chapter Three
Job Skills Assessment

Objectives:

To explain Step 4 of the ASTD's outline
To define workplace assessment
To provide multiple approaches for assessing and evaluating needs
To provide a process for conducting task analysis
To provide multiple reporting formats

Defining Workplace Assessment

"Assessment" in the workplace is the identification of **Optimals** (what **ought** to be happening) and **Actuals** (what **is** happening), and the resulting skill gaps, or **Needs**.

Experts recognize these characteristics about assessment:

- In a systematic approach, assessment comes at the beginning.
- Assessment must be done in order to identify the training need(s).
- Assessment costs: it takes both time and staff.
- A variety of assessment instruments may be utilized to collect and analyze relevant data.
- Most Workplace Basics programs **are about training workers in conjunction with new systems and technologies**. Expanded ways of understanding the situation are required for appropriate assessments.

Think of Workplace Assessment as a process with **multiple stages**, **techniques**, and **assessment instruments**, each enabling you to identify NEEDS.

An Example of Multiple Stages in the Assessment Process to Determine Optimals:

Stage One: Identify specific problem and target goal/population.
Stage Two: Conduct a task analysis for each targeted position.
Stage Three: Examine attitudes about the subject, skills.
Stage Four: Investigate other possible causes.

An Example of Multiple Techniques in the Assessment Process:

Stage 1:	Consult with various company personnel; administer questionnaires; jointly develop an assessment plan; conduct group meetings for planning and teambuilding.
Stage 2:	Interview and observe employees and their supervisors who do exemplary work. Collect and study work samples, records and reports.
Stage 3:	Interview employees regarding their attitudes about the subject, skills, new system, or technology. Collect confidential data from questionnaires or interviews.
Stage 4:	Investigate the "other" factors, e.g., company incentives, motivation, alcohol and/or drug abuse, work environment, safety records, turnover records, labor/management problems.

An Example of the Use of Multiple Instruments in the Assessment Process:

Stage 1:	Individual and/or group-administered questionnaires; planning outlines; timelines; a written, approved plan.
Stage 2:	Structured interview format/form, questionnaires, standard observation format/form, recording forms, reports and feedback instruments.
Stage 3:	Same types of instruments as in Stage 2, but related to attitudes.
Stage 4:	Same as Stages 2 and 3, but related to "other" factors.

In actual practice, you may find, as did our staff, most employers have pre-selected the targeted skill-deficient positions. But remember a customized, company-targeted job assessment is preferable to "guesstimating" problem(s) and needs. Develop good rapport with company staff at all levels. Participation rates will be higher, and long-term goals will be achieved.

Job Audits

Once the targeted job has been chosen, the next step is a "job audit": identification of skills required to perform **tasks** and **duties**. **Tasks**, the most basic job component, are specific job functions within the larger category of **duties**, reducible to two- or three-word descriptions, usually one verb and noun, e.g., "sorts mail." Whereas a job may have less than ten major duties, each duty will have a large number of related tasks. Each task entails substeps and single behaviors.

Job audits can take many forms, but they still utilize similar **stages, techniques, and instruments** of needs assessment.

Examples of Observations:

A job audit generally begins with a tour of the facility, meeting key staff members with whom you will be working. While touring, mentally observe and note some of the following conditions :

- any reading materials, such as job aides or posted signs
- the status of the work environment (clean, dirty, organized)
- demographics of the worker population (average age, racial mix, male/female ratios, observable skill levels)
- processes that are being done
- availability of break or lunchroom facilities
- length of shifts
- workers' receptivity to their duties/environment.

Examples of Work-related Print Materials to Collect:

In addition to those workplace materials which you will need to collect, e. g., **work samples, handbooks, forms, charts, job aids**, etc., ASTD's ***Workplace Basics Training Manual*** advocates gathering the following:

- recruiting records, job postings, advertisements
- written reactions to past training
- exit interviews and turnover records
- past studies, analyses, or surveys of potential trainees or their jobs
- other training materials used for this or similar populations and projects
- performance appraisal records
- union grievance records
- copies of procedures and other training guides
- lists of tools and equipment used on the job
- job performance standards
- long-range or strategic plans, including the status of objectives set for the current year.

(Caution: Because of right-to-privacy laws, such records may be withhheld. If you get written authorization from the employee, you then may access the personnel file.)

Remember that all these materials will be utilized, not only to identify specific training needs, but to help you develop the individual worker assessment and tailor your instruction to meet the workplace 's needs.

Examples of Interview Questions:
During the interviews and observations, ask the following questions:

- What is the job?
  - What are the job title, major duties, primary output or product?
  - With what frequency are the major tasks accomplished?
  - To whom does the worker report?
  - What issues, problems or challenges do the workers face?
- How is the job done?
  - What are the steps?
  - What background knowledge is required to complete the job?
  - What skills are required to complete the job?
  - What tools or machines, if any, are needed?
  - What is the sequence of steps to complete the job?
  - Where in the sequence does the problem seem to occur?
  - What safety factors are important?
  - How is the task measured?
  - With whom does the worker interact during the task?
  - How integral is this interaction to total job performance?
  - What is the status of communication? Any breakdowns?
- What quality of work is expected?
  - What performance standards exist for the job?
  - How does the employee performance differ from the norm?
  - Why do the differences exist?
  - What are the workers' deficits--knowledge, skills, and attitudes?

- How can the skills, knowledge and attitudes required for the job be learned?

  What are the learning objectives for the job/training?

  What content must be learned?

  In what sequence would the company recommend the content be learned?

  What is the educational background and mix of the employees

  targeted for training?

  How should workers be grouped for assessment and training?

  What was the outcome and level of success of prior training?

  What factors may affect efforts to train the group?

Suggestions:
You might ask the person you are observing how he/she would teach the tasks. Ask open-ended , not "Yes/No" , questions to gain the most information. For example, ask , "What challenges you the most?" Avoid inquiring: "Do you find your work challenging?"

The next page, page 23, contains a sample job analysis. Note the number of tasks contained within each duty.

Sample for One Duty:

Title of Position: Clerk-typist

Duty: Preparing insurance estimates

Tasks:	**Workplace Basics Tasks:**
1. Researches estimates	1. Locates information in ratings reference material
2. Records relative costs	2. Classifies information 2.1 Translates information into written form 2.2 Completes forms from classifications/tables 2.3 Compares/contrasts information from tables to estimates 2.4 Records correct information
3. Computes estimate	3. Calculates total from classified information 3.1 Adds costs 3.2 Multiplies by state tax percentages 3.3 Verifies correct total
4. Types estimate	4. Types summary statements 4.1 Utilizes forms 4.2 Draws conclusions 4.3 Proofreads final copy

After **Optimals** have been determined for each **task**, needs assessment must be directed toward assessing the **Actuals, that is, individual performance on the job**.

Performance-Based Assessment

As with the job audit process, assessing workers' actual skills should be linked to the project's goals and objectives. Various assessment/testing techniques may be used; each should provide some needed information for implementing the plan, designing the curriculum, and evaluating the program.

Norm-referenced and Criterion-referenced/Teacher-made tests:

Depending on the larger training goal, assessment tests fall into two categories: norm-referenced, standardized tests and criterion-referenced tests (either commercially produced or teacher-made).

Norm-referenced, standardized tests, commercially-prepared, are used to compare the clients' performance to some national standard or "norm". Examples of these tests are the Scholastic Aptitude Test (SAT), General Education Test (GED) or Tests of Adult Basic Education (TABE). They may report scores as grade equivalencies (grade level comparable to assessed skills), percentiles or stanines. They do not detail the client's weak areas.

Criterion-referenced tests, whether commercially-produced or instructor made, assess skill areas related to the specific learning area or objective. Results indicate relative strengths and weaknesses as demonstrated by items missed on the test. They may also report scores as "norms" or standardized comparisons.

All tests should be both valid and reliable. Valid tests correspond to the desired outcome. For example, to effectively examine a clerk-typist's spreadsheet proficiency, select only spreadsheet-compatible problems. Reliable tests offer consistent results. In other words, equally-skilled secretaries could take the same test and obtain similar scores.

Advantages and Disadvantages of Both Types of Tests:

The advantages of *norm-referenced tests* are:

- They have been administered and revised many times.
- They are constructed for a specific purpose and are valid.
- They allow for comparison of individual performance to the performance of a large group of people who took the same test.
- They give a general level of ability in areas assessed.

The disadvantages of *norm-referenced tests* are:

- They do not give a precise description of specific skills needed to master an objective.
- They are only a general measure of ability.
- They are difficult to construct and standardize.
- They cannot be used to determine mastery of a skill.

The advantages of *criterion-referenced tests* are:

- They provide specific areas of strength and weakness in the assessed skills.
- They can be constructed around any performance-based objective.
- They can easily be constructed relative to the program goals.
- They are usually more valid to workplace needs than standardized tests.

The disadvantages of *criterion-referenced tests* are:

- They may lack reliability due to insufficient norming. (Approximately thirty tests must be administered to determine if the test questions are reliable. Questions which yield too many correct responses or questions which everyone misses need to be discarded.)
- They often reflect the bias of those who construct the test.

- Criteria for mastery may also be arbitrary, unless many people in similar industries are consulted, some standard of performance is agreed upon, and skill mastery has been so determined.
- Results are usually reported on an individual basis rather than as compared to a larger population.

Again, the type of assessment test selected depends on the goals of the sponsoring organization. If a criterion-referenced test is needed, here are some guidelines.

Construction of Criterion-referenced Tests

The construction of criterion-referenced tests depends on the subject matter and workplace skills targeted for assessment. General hints are as follows:

- Consider the type of test format needed. *For example,there are open-ended questions, essay questions, multiple choice "objective" questions, true and false questions. Link the question format to the subject matter and other considerations, such as the amount of time available to score the test. Essay questions are easy to construct, but require a holistic scoring approach . Multiple choice test questions take more time to build the questions, but very little time to score.*
- Allow plenty of time to construct and edit the test questions.
- Construct the answer key.

To create a test's reading section, use specific passages from the company training manual. Workers are more likely to do well on the test if they can direct their reading comprehension to job-related materials. Select excerpts that require participants to read thoroughly for the main idea; find passages in which the main idea is implicitly stated rather than directly written. Construct detailed questions that ask readers to use their background of experience and information to determine the appropriate answer.

In building the vocabulary section, consider that most of the workers have already had some training. They also have had some vocabulary development specific to their area of expertise.

Hints for constructing test items:

- Use open-ended questions.
- When writing multiple choice answers, build selections so that two of the choices are similar enough to require selection of the **most correct** answer.
- Avoid using joke answers, e.g., "Because Donald Trump bought him out."
- State questions positively.
- Group question types together. For example, if you plan to do open-ended questions and multiple-choice questions, do not mix the two types together.

Sample portions of a typical assessment test--geared to Statistical Process Control trainees--are included on the next two pages. Pages 29 and 30 contain excerpts from the SPC training program, **Statistical Methods for Improving Performance**, Concourse Corporation, 1988.

Instructions: Read the following, then respond to the questions.

How to Collect Accurate Data

We collect data in order to make good decisions about improving quality. We can't make good decisions unless we make sure that the data we collect represent the actual situation.

Following are three guidelines you should follow to ensure that the data you collect are accurate.

1. Make sure the data being collected are what you need. The data you collect should match your purpose for collecting the data. For example, suppose you want to collect data concerning flaws in bolts of cloth. (These flaws could be things such as snags, discolorations, frayed edges, and so on.) If you compile a data collection sheet that shows the weights of the bolts, you would not get specific information on the types of flaws that are occurring.

2. Make sure the measurement instrument is accurate and appropriate. The instrument you use to measure data must be accurate. Instruments should be checked periodically to make sure that they are adjusted properly. The instrument you use must also be appropriate. For example if a specification is 1/1,000", you wouldn't want to measure your samples using an instrument that measures only up to 1/8".

3. Make sure to include all the necessary information. In order to analyze the data, information that identifies the data must be included. Identifying information includes items such as where the data came from (department, shift, date, machine number, lot number, etc.), why the data were collected, and who collected the data.

Questions:

1. Why is data collection important?
   a. to determine if the machine is working correctly.
   b. to include all the necessary information.
   c. to make logical decisions about production.
   d. to include the accurate instrumentation.

2. The passage is mainly about
   a. the reasons to collect data.
   b. the important factors to know about data collection.
   c. data collection
   d. ways to collect data.

3. Which of the following is not included as a key to data collection?
   a. collect relevant data.
   b. measure accurately.
   c. data collected should represent the whole group.
   d. list the data appropriately.

Monitoring and Modifying the Process

The second reason we collect data is to monitor the ongoing quality of a process. Remember that a process is the set of steps we follow to accomplish our tasks. We collect data at each step to make sure that the specifications for that step are being met. Specifications, or specs, are the limits of acceptable variation set by the industry or the company. If we find a problem, we can make a change right away. After the change is made, we continue to collect data to note its effects.

Monitoring each step of a process, we can correct problems early. If we wait until the final inspection to look for problems, it's too late. Scrap and rework have already been created. If the causes of scrap or rework are identified and corrected at each step of the process, problems won't be passed on.

Questions:

1. What is a process?
   a. a set of steps to complete a task.
   b. a set of steps.
   c. a series of ideas to complete.
   d. a series of data collection.

2. What is the main reason to watch each step of a process?
   a. to insure quality.
   b. to correct problems early.
   c. to insure the final inspection.
   d. to correct quality.

Other Forms of Needs Assessment to Learn the Actuals:

In addition to customized assessment tests, other informal techniques may be used to determine actual needs. Before the test, hold informational meetings to build worker rapport, offset harmful gossip, and clarify the test's purpose, length, monitor, and confidentiality. Nothing destroys basic skills training faster than suspicions that the program will be utilized to fire staff or otherwise jeopardize worker well-being. The confidentiality of all individual participant records must be maintained; workers must be assured that this is the case. If management wants detailed individual reports, then it must be stated to the workers "up front".

Individual interviews with prospective workers may also help you collect pertinent information. The following questions might be asked during an informal interview:

Sample Interview Questions (Prospective Trainee)

1. Describe your responsibilities in your present job.

2. How long have you been doing this job?

3. What are the most challenging parts of your work?

4. What are the easiest tasks that you perform?

Reporting Results

After completing needs assessment, compile results and prepare the sponsoring company's assessment report.

Compiling results begins with scoring tests and summarizing group tendencies. It is helpful to use basis statistics such as mean, range of scores, frequency and standard deviation. In looking at results for program development, observation of group tendencies is usually summarized by reporting the range of scores, frequency of distribution and the mean score for the group.

The **mean** is the average score of performance when all results have been compiled. The mean is obtained by averaging all test scores for the group. The problem with reporting the mean is that it tends to hide the highest scores and the lowest scores. It also hides the overall number of scores at any point in the range of scores. An average score of 70% tells you that some people scored in the high range and some in the low range, but it doesn't tell you exactly how many scored at any given point.

The **range** of scores is the difference between the highest and the lowest individual scores within the test group.

The **frequency distribution** reports how many people achieved a specific score in the range of scores within the test group.

Both range and frequency distribution yield those types of comparative information not available through the mean score.

Reporting group strengths and weaknesses depends on the desired standard of performance (the Optimals). Generally, reporting will show the group tendency compared to the desired standard of performance. It should also include the range and frequency of scores to indicate how many workers are candidates for the Workplace Basic skills program.

The report must also include specific recommendations for program design based on group tendencies. The group report may also include a summary of the specific individual recommendations (without divulging individual scores). Reports for each participant may present the scores and specific recommendations. This becomes the basis for instruction.

Individual reports and recommendations provide insights for the prospective learner as to the nature of his/her strengths and weaknesses. An item analysis allows for the study of specific items missed. Most test items are grouped together to allow for comparisons within those areas of weakness. On a math test, for example, if an individual misses three out of five items related to computation with decimals, decimals should be recommended for instruction.

Separate reports are prepared for the company and for each employee. The company report should be complete, with the exception of actual test scores for the individuals tested. Individual reports may present the participant's scores and specified recommendations, and may include how he/she tested in relation to the group. To protect privacy, results may be provided in sealed envelopes.

Again, a follow-up meeting for all program participants is helpful. Give the group results; offer specific information on any questions the participants may have. If time is available, schedule individual counseling with each participant about his results and recommendations.

This group meeting is also a perfect opportunity to announce a start date and location for the training.

Chapter Four
Instructional Design for Workplace Basics

Objectives:

To describe Steps 5-7 of the ASTD's outline
To provide an overview of instructional design for workplace programs
To provide various strategies and techniques

A Learner-Centered Curriculum Model

In order to design a learner-centered curriculum, many factors must be considered. From ***Helping Adults to Learn and Change*** by Dr. Russell Robinson of the University of Wisconsin-Milwaukee, 1987, this model of "*The Learning Transaction*" helps to conceptualize those factors.

As you will notice on page 35, the core of the learning process is formed by two constantly interacting halves: the learning environment and the adult learner. The learner, recognizing his/her problem (skill deficiencies), becomes aware of the need for more training and enters the learning environment. Forces such as the learner's life stage, values, peers, psychological needs, perceptions, and self-concept influence his/her decisions. The learning environment devises teaching strategies and offers experiences influenced, undoubtedly, by the learner's concerns. The learning environment, likewise affected by institutional concerns such as goals and resources and interpersonal forces such as respective teachers' styles/talents and group dynamics, influences the learner in turn. The interaction between all forces ebbs and flows, constantly being modified as learner and environment affect each other.

A Learner-Centered Curriculum Model

The Keys to Effective Instructional Design

At the heart of the instructional design process for a performance-based/functional-context curriculum are two key concepts: written performance objectives and criterion-referenced testing. Performance objectives are essential to measuring training success and should be written for each task selected for training. In a performance-based system, learners need to master only what they do not already know to successfully carry out a specific task.
Quoted from ASTD's ***Workplace Basics: The Skills Employers Want***, 1989, p. 28.

Instructional design in the workplace begins with establishing the learning objectives and the evaluation procedures. By convening planning teams, finding out what the Optimals are, and assessing the needs of the workers to learn the Actuals, all foundations have been established to write objectives. The needs assessment details **what the learner knows and what he/she needs to know**. These pinpointed skills become the basis for the written objectives that will be taught and evaluated throughout the training program. *The teacher must be able to write effective performance objectives and construct the evaluation measures at the beginning of instructional design.*

Review on how to write performance objectives

Performance objectives are statements which establish a **Performance** (verb), a **condition**, and a **criterion** (standard of achievement). They are stated in objective and measurable terms so that anyone observing the learner performing the task would agree as to the level of competency.

Example:

Given a computer, printer, and computer software, generate a block-styled business letter with 100% accuracy in thirty minutes.

Performance is based on an action verb that specifies what the learner must demonstrate.
Condition outlines the circumstances under which the learner will be required to perform the activity.
Criterion defines how well the learner must be able to perform the task/skill.

The criterion depends on the company's expectations and how long the learner has worked on a particular skill. If it is a new skill, you can expect a lower level of accuracy. The more the skill is practiced, the greater the level of accuracy should be.

Job-related Training Materials:

Our experience in working with the performance-based approach has proven that the process succeeds for workers. The **learning accelerates, with greater retention of learning** leading to improved motivation and higher success rates for workers. When utilizing job-related materials, learning transfers to the job on a daily basis, and it is reinforced as the worker continues to utilize new skills. *The teacher must be able to customize training materials, integrating work-related materials as well as multi-media devices into the teaching strategies.*

Developing Customized Curriculum Materials

The most effective instructional materials you can use for workplace basics instruction are those you develop yourself. Those materials garnered during the initial planning stage may be utilized. Be confident as you begin this process. As you have developed the program plan, conducted the assessment, and written performance objectives, you have gained a greater insight into worker abilities, needs and interests than any outside publisher could know.

Teacher-made, informal assessments may be excellent tools to determine other abilities and needs. Having the worker provide a writing sample offers an opportunity to check grammar, spelling, punctuation, and self-expression skills. Informal writing throughout the course can show benchmarks of progress in gaining new skills, give valuable feedback regarding attitudes, and assist in your evaluation of program effectiveness.

Example of an Informal Writing Assessment: (Size reduced)

Name_____ Date_____

Workplace Basics Project:_____

Writing Sample: In the space provided below, please write a one page paragraph detailing your work history. Include things you like about your present position as well as specific ways the job could be better. Remember! All your work in this program is confidential.

The reading strategies approach is another excellent method for creating curriculum materials. Analyze written materials for strategies that a good reader would use to locate and process information. Training manuals, charts, graphs, and job aids are valuable resources to use.

Reading skills can be broken down into two basic components: vocabulary and comprehension.

Vocabulary: Use workplace vocabulary for instructional aids. Clients should be able to define the word in and out of context. Then explore other meanings the word may have.

Determine what levels of comprehension are needed to make sense of the information. Structure activities so the reader may practice using the new vocabulary in a variety of ways.

Comprehension: The ways a reader directs and redirects comprehension have been grouped into a process called **metacognition**. Metacognition is the process of gearing thought processes to unlock information in the text. Then he can use the information for whatever purpose necessary.

While reading the reader monitors what he is thinking, recognizing when he is **not** comprehending. When that occurs, the reader begins to enlist one or more of the following strategies:

- skipping to the next sentence/paragraph to gain additional information
- locating other context clues
- rereading previous text
- skip the passage altogether (This depends on the reading purpose. If the comprehension is key, then the rest of the material can't be fully understood.)
- ask someone
- sub-vocalization
- slowing the pace
- consulting an outside resource (e.g., dictionary or indexes)
- looking for graphic clues (Some of these include print-face definitions such as italics, boldface or other graphic depictions such as diagrams, maps, pictures.)

Defining Other Reading Strategies Needed "To Learn" or "To Do"

Scanning: Reading information rapidly to get an overview of content or to look for a single specific piece of information.

Skimming: Looking at information superficially to determine idea, purpose, style, or structure.

Reading for Main Idea: Reading for the central concept addressed in the text. It can be implied or explicitly stated, but in the workplace reading, it will usually be directly stated either at the first of a paragaph, in the middle, or at the end as a conclusion.

Reading for Details: Details support the main idea. Again, they can be implied or explicitly stated.

Inference: Higher order thinking skills are required for inference. The reader uses his/her past experience to understand the text and glean new information.

Drawing Conclusions, Synthesis, Analysis, Interpretation and Evaluation are all often listed as individual reading skills, but they are all aspects of inferential reasoning.

Reading Graphic Material: Skimming for main idea, structure, content, and details are also used for reading graphs. Information is then interpreted in light of the purpose for reading and previous experience.

Literal-Level Comprehension: Being able to list, summarize or pinpoint details either explicitly stated or implied in the text.

No matter what types of reading matter used, you must choose whatever is most appropriate for your purposes. Use the **Materials Quality Checklist** on page 41 to assess the quality of the selected works. If they rate a "Yes" on all counts, you have indeed picked first-rate study aids.

Materials Quality Checklist:

Material is available in a number of skill levels.	Yes	No
Material is age appropriate/adult oriented.	Yes	No
Content is presented in a clear, concise writing style.	Yes	No
Materials allow participants to interact directly with contents, e.g,. workbooks provide sufficient space for responses and provide multiple examples for practice.	Yes	No
Material is sequentially organized in gradually increasing levels of difficulty.	Yes	No
Material provides for immediate feedback.	Yes	No
Material assesses concepts covered before it progresses to the next concept.	Yes	No
Material contains graphic clues and diagrams.	Yes	No
Concepts are explained in at least two different ways.	Yes	No
Concepts are reviewed periodically throughout the course of the book or workbook to emphasize previous learning and to reinforce concepts covered previously.	Yes	No
Concepts are logically related to each other.	Yes	No
Concepts are practical in that they can be immediately and directly applied by the learner.	Yes	No

If you would like some hints as to where to order Workplace Basics literacy materials, the following list gives you eight possible suppliers:

Partial Listing of Publishers of Adult Materials

Contemporary Books, Inc.
180 N. Michigan Avenue
Chicago, IL 60601

Education Research, Division of EduSearch
370 Lexington Avenue
New York, NY 10017

McDonald Publishing Company, Inc.
8216 Exchange Way
St. Louis, MO 63144

McGraw Hill Publishing Company
Mid-Continent Regional Office
13955 Manchester Road
Manchester, MO 63011

New Readers Press
Department 80, Box 131
Syracuse, NY 13210

Southwestern Publishing Company
Region Three
355 Conde Street
West Chicago, IL 60185

Steck-Vaughn Company, Inc.
P. O. Box 26015
Austin, TX 78755

University Associates, Inc.
8517 Production Avenue
San Diego, CA 92121-2280

Use of Computers in Workplace Basics Programs

One tool that increases the opportunity for successful learning is the computer--as a primary tool for instruction or for reinforcement of any subject/skill area. The use of database, word processing, and spread sheet software programs are especially good for upgrading skills. With today's ever-increasing reliance on technology, the computer should be included whenever possible as a main ingredient of workplace basics courses.

The reader can "see" what is written on the screen and publish simply by printing it. Computers give learners an empowerment that they may not feel when they are working on more traditional paper-and-pencil types of activities.

Although almost all new computer students experience anxiety, they soon feel motivated to upgrade their skills, as such abilities give them an "edge" over competitors.

While the importance of texts and equipment cannot be overstressed, learning environments, scheduling, and evaluations also affect workers' progress.

Learning Environments:

Because companies' resources differ, one business may offer a smorgasbord of resources, high-technology multi-media, and management systems. In another, the teacher may have no sophisticated aids. *The instructor must be flexible and able to adapt from one kind of instructional environment to another.*

Three Examples of Workplace Basics Training Environments

The environment may be:

- a long-term, on-site program, such as the **Skills Enhancement Program** at the UAW/Ford plant in Hazelwood, Missouri. This program serves workers and spouses with a great variety of educational programs that bridge adult basic education, English as a second language, entry-level training for college courses or skilled trades programs, introduction to computers, or how to build a deck around your swimming pool. The high-tech lab is equipped with computers, interactive video, software, bookware, and a number of magazines. The teacher in this environment must be extremely flexible and responsive to worker needs, constantly designing new curriculum and training materials. Other coordinating duties are nearly as important as the instructional expertise. The teacher must be the recruiter, selling the program on the shop floor or cafeteria. She/He must work side-by-side with other educational team members who represent both union and management viewpoints.

- an on-site (the business location) program that is short-term. The curriculum is designed to meet specific training goals. A course is developed; training is implemented, and the course is completed within a span of three months. (It is beneficial for the educational provider to complete a follow-up evaluation at some later date for all program participants to verify training retention and cost benefits.)

- an off-site program that is established for long-term service to Workplace Basic skills training, such as the **Skills Enhancement Center** at Forest Park Community College in St. Louis. This program serves employed, unemployed and disadvantaged adults. Businesses contract for specific training needs. A great deal of assessment is carried out for dislocated workers. Individuals who have specific employment goals get the skill upgrades that are needed. The center is equipped with computer technology, along with a great variety of software, video/audiotapes, bookware and customized materials.

Scheduling

The following factors should be considered when scheduling the Workplace Basics programs:

- time(s) the class will meet during the week
- the number of sessions the class will be held
- the number of weeks the course will last
- the number of people who can be enrolled
- the work schedules of the workers enrolled in the class relative to the proposed time(s) of the session
- the feasibility of mastering skills within the time allotted.

Planning On-going Evaluation

Provide many types of evaluation processes and procedures within your instructional design. Remember, this lasts until participants exit the program. (Maybe even then you will conduct a follow-up evaluation.) Varying types of evaluation provide multiple measures of success:

- Informal Questionnaires
- Interim Interviews (both oral and written)
- Benchmark progress tests
- Post-tests (which mirror pre-tests)
- Exit interviews
- Formal course evaluation forms

In conclusion, because this manual provides only a brief overview of the demands and rewards of founding a Workplace Basics training course, as your abilities expand, you will need a more advanced guide. We refer you to a very worthy resource, cited earlier, from the ASTD ***Workplace Basics Training Manual***. "Resource E: Generic Curriculum Guidelines for Promoting Workplace Basics" provides content guidelines for each of the seven Workplace Basics skill areas.

Best wishes for success as a competent teacher and/or tutor in the workplace!

About the Authors:

Wilma Sheffer, Literacy Director for the St. Louis Community College, initiated the manual through the LIFT-Missouri grant. An intensive search of current practices and research was added to the active demonstration models for workplace literacy that are under her direction. Wilma has over fifteen years experience as a professional educator in the field of adult basic education and adult literacy, including over eight years experience in program administration. Wilma has written and received a number of grants, including the federally funded *Student Literacy Corps Program.* Other model teacher and tutor training programs have been developed and implemented to meet the new workplace literacy needs.

Julia Roscoe, Reading Specialist and Trainer in the Skills Enhancement Center, provided research and content development for much of the manual's instructional design components. Julia's Masters Degree in Reading, combined with her experiences in teaching both children and adults, provides an intergenerational understanding of literacy. Julia has developed her expertise in Workplace Literacy with numerous experiences in working with business, conducting job audits and assessments, developing the customized curriculum, materials and methods, and evaluating the clients' performance.

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